

## SPECIFICATIONS

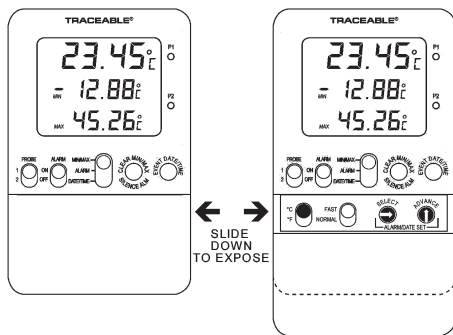
|              |   |
|--------------|---|
| Range:       | -58.00 to 158.00 °F<br>-50.00 to 70.00 °C |
| Accuracy:    | ±0.3 °C                                   |
| Resolution:  | 0.01°                                     |
| Update Rate: | 1 second (FAST)<br>10 seconds (NORMAL)    |
| Battery:     | 2 each AAA (1.5V)                         |

### Probes Supplied:

**Model 4238--** Supplied with 1 bottle probe. Designed for use in refrigerators and freezers, bottle probes are filled with a nontoxic glycol solution that is GRAS (Generally Recognized As Safe) by the FDA (Food and Drug Administration) eliminating concerns about incidental contact with food or drinking water. The solution filled bottle simulates the temperature of other stored liquids. Velcro® and a magnetic strip are provided to mount the bottle to the inside of a refrigerator/freezer. The micro-thin probe cable permits refrigerator/freezer doors to close on it. (**Do not immerse bottle probes in liquid**).

**Model 4239--** Supplied with dual bottle probes. (**Do not immerse bottle probes in liquid**)

**Model 4240--** Supplied with dual standard probes with cables. Designed for use in air and liquids, the sensor and cable may be completely immersed.



## SETTING THE TIME-OF-DAY/DATE

Slide the DISPLAY switch to the DATE TIME position, the display will show the time-of-day and date.

While in the time-of-day/date display, pressing the SELECT button will allow the date and time to be set. Pressing the SELECT button will cause the digits to flash in the following order Year→Month→Day→Hours→Minutes→12/24 hour time→No digits flashing (value set). Once the desired item is flashing, pressing the ADVANCE button will increment the value.

While in the time-of-day/date display, pressing the EVENT DATE TIME button will switch the date display between Month/Day (M/D) and Day/Month (D/M).

With the desired time-of-day/date appearing on the display, press the SELECT button until no digits are flashing on the display. The time-of-day/date will be saved.

**Note:** While in the setting mode, if no button is pressed for fifteen (15) seconds, the unit automatically exits from the setting mode.

## VIEWING THE TIME-OF-DAY/DATE

To view the time-of-day/date, slide the DISPLAY switch to the DATE TIME position.

## DISPLAYING °F OR °C

To display the temperature readings in Fahrenheit or Celsius, slide the °C/°F button to the desired position.

## DISPLAYING PROBE 1 OR PROBE 2

Slide the PROBE switch to the desired position (1 or 2) to display the desired temperature sensor readings.

## MINIMUM AND MAXIMUM MEMORY

There are four points that are automatically recorded into memory:

- *Minimum (MIN) Probe 1 (P1) Temperature Achieved with time-of-day and date achieved*
- *Maximum (MAX) Probe 1 (P1) Temperature Achieved with time-of-day and date achieved*
- *Minimum (MIN) Probe 2 (P2) Temperature Achieved with time-of-day and date achieved*
- *Maximum (MAX) Probe 2 (P2) Temperature Achieved with time-of-day and date achieved*

### Minimum and maximum temperature memories

**are NOT programmable.** The minimum temperature recorded into memory is the minimum temperature achieved since the last time the memory was cleared. The maximum temperature recorded into memory is the maximum temperature achieved since the last time the memory was cleared. The minimum and maximum temperature memories are maintained over the period since the memory was cleared.

Minimum and maximum memories are recorded for both sensors regardless of the display mode.

## VIEWING MIN/MAX MEMORY

1. Slide the PROBE switch to the desired position (1 or 2) to display the desired temperature sensor readings.
2. Slide the DISPLAY switch to the MIN MAX position. The display will show the current temperature and minimum/maximum memory for the selected probe.

## VIEWING MIN/MAX MEMORY DATE/TIME

1. Slide the PROBE switch to the desired position (1 or 2) to display the desired temperature sensor readings.
2. Slide the DISPLAY switch to the MIN MAX position. The display will show the current temperature and minimum/maximum memory for the selected probe.
3. Press the EVENT DATE TIME button, the minimum temperature achieved by that probe along with the time-of-day/date the temperature was achieved will appear on the display (indicated by MIN and TIME appearing on the display).
4. Press the EVENT DATE TIME button a second time, the maximum temperature achieved by that probe along with the time-of-day/date the temperature was achieved will appear on the display (indicated by MAX and TIME appearing on the display).

**Note:** If no button is pressed for fifteen (15) seconds, the unit automatically returns to the current temperature display mode.

5. To exit from the memory display mode, press and release the EVENT DATE TIME button until MIN or MAX no longer appears on the display, or simply do not press any button for fifteen (15) seconds.

## CLEARING THE MINIMUM/MAXIMUM MEMORY

1. Slide the PROBE switch to the desired position (1 or 2) to display the desired temperature sensor readings.
2. Slide the DISPLAY switch to the MIN MAX position. The display will show the current temperature and minimum/maximum memory for the selected probe.
3. Press the CLEAR MIN MAX button to clear the minimum and maximum memories for the probe being displayed.

## ALARMS

Both temperature sensor (P1/P2) alarm limits may be set in 0.1° increments. Probe 1 and Probe 2 alarm limits are set independent of each other.

With the alarm switch set to the ON position:

-The unit will sound an alarm and flash the corresponding LED (P1/P2) when the temperature measured is outside the alarm limits that have been set (equal to or lower than the low alarm set point, or equal to or greater than the high alarm set point).

-The alarm will sound regardless of which sensor is being displayed and regardless of the display mode. Example: If Probe 1 is being displayed and the DISPLAY switch is set to MIN MAX, but Probe 2 reaches an alarm condition, the alarm will sound and the P2 LED will flash.

## SETTING THE TEMPERATURE ALARM LIMITS

1. Slide the PROBE switch to the desired position (1 or 2) to display the desired temperature sensor readings.
2. Slide the DISPLAY switch to the ALARM position. The display will show the current temperature and low/high alarm set points for the selected probe.
3. While in the alarm display mode, pressing the SELECT button will allow the alarm limits to be set.

Pressing the SELECT button will cause the digits to flash in the following order: Low Alarm 1st Digits→Low Alarm 2nd Digit→Low Alarm Decimal Digit→High Alarm 1st Digits→High Alarm 2nd Digit→High Alarm Decimal Digit→No digits flashing (value set).

4. Once the desired item is flashing, pressing the ADVANCE button will increment the value.
5. With the desired alarm set points appearing on the display, press the SELECT button until no digits are flashing on the display. The alarm settings will be saved.

**Note:** While in the setting mode, if no button is pressed for fifteen (15) seconds, the unit automatically exits from the setting mode.

## VIEWING THE TEMPERATURE ALARM LIMITS

1. Slide the PROBE switch to the desired position (1 or 2) to display the desired temperature sensor readings.
2. Slide the DISPLAY switch to the ALARM position. The display will show the current temperature and low/high alarm set points for the selected probe.

## ENABLE/DISABLE ALARMS

To enable the alarm to activate when a temperature measured is outside the alarm limits, slide the ALARM switch to the ON position.

When the alarm is enabled, both Probe 1 and Probe 2 alarm set points will be monitored. If either sensor reaches an alarm condition, the alarm will activate. It is not possible to enable the alarm for one sensor and disable the alarm for the other sensor.

To disable the alarm so that no alarm sounds when a temperature measured is outside the alarm limits, slide the ALARM switch to the OFF position.

## ALARM SOUNDING

With the alarm enabled, the unit will sound an alarm and the corresponding (P1/P2) red LED will flash when a temperature being measured is outside the alarm limits that have been set (equal to or lower than the low alarm set point, or equal to or greater than the high alarm set point). Until it has been acknowledged/silenced (see the "Acknowledge/Silence An Alarm" section), the alarm will sound and corresponding (P1/P2) red LED will flash continuously for the first sixty (60) seconds. After 60 seconds, the alarm will sound and LED will flash for ten (10) seconds every minute.

If the alarm is sounding based on the low alarm limit and the probe temperature is being displayed, "LO ALM" will also flash on the display. If the alarm is sounding based on the high alarm limit and the probe temperature is being displayed, "HI ALM" will flash on the display.

The alarm will sound and corresponding LED will flash regardless of which sensor is being displayed and regardless of the display mode. Example: If Probe 1 is being displayed and the DISPLAY switch is set to MIN MAX, but Probe 2 reaches an alarm condition, the alarm will sound and the P2 LED will flash.

The unit will continue to alarm and flash the corresponding (P1/P2) red LED until the alarm has been acknowledged/silenced by either pressing the SILENCE ALM button or by sliding the ALARM switch to the OFF position (see the "Acknowledge/Silence An Alarm" section). The unit will continue to alarm and flash the corresponding (P1/P2) red LED even if the temperature being measured returns to an in-range/non-alarm condition.

## ACKNOWLEDGE/SILENCE AN ALARM

While alarming, the alarm may be acknowledged/silenced in one of the following ways:

1. Slide the ALARM switch to the OFF position.  
Setting the ALARM switch to the OFF position will silence the alarm, but when it is switched back to the ON position, if the temperature being measured is still in an alarm condition, the alarm will sound. Setting the ALARM switch to the OFF position prevents any/all alarms from sounding.
2. Press the SILENCE ALM button. Pressing the SILENCE ALM button will silence the alarm, the alarm will not sound again until the temperature being measured has returned to an in-range condition and then goes to an alarm condition.

## VIEWING ALARM EVENT VALUE DATE & TIME

When the thermometer achieves and alarm condition, the date and time for the most recent alarm condition is stored into memory. The most recent alarm event achieved is stored for each probe (P1/P2) independently. To view the most recent alarm event:

1. Slide the PROBE switch to the desired position (1 or 2) to display the desired temperature sensor readings.
2. Slide the DISPLAY switch to the ALARM position. The display will show the current temperature and the low/high alarm set value.
3. Press the EVENT DATE TIME button, the most recent alarm set value that was achieved along with the time-of-day/date the alarm occurred will appear on the display.

**Note:** The value that appears at the top of the display while displaying the event date/time, is the alarm set value that caused the alarm condition, not the actual temperature achieved while in the alarm condition. If nothing appears on the display when the EVENT DATE TIME button is pressed, this indicates that either the unit has not achieved an alarm condition, or that the alarm set values have been changed for the selected probe since the unit last achieved an alarm condition.

4. To exit from the alarm event display mode, press and release the EVENT DATE TIME button, or simply do not press any button for fifteen (15) seconds.

## DISPLAY MESSAGES

LL.LL appearing on the display indicates that the temperature being measured is outside of the temperature range of the unit, or that the probe is disconnected or damaged.

## BENCH STAND

The unit is supplied with a bench stand that is a part of the back of the unit. To use the bench stand, locate the small opening at the bottom back of the unit. Place your fingernail into the opening and flip the stand out. To close the stand, simply snap it shut.

## EXAMPLE - USING THE ALARM AND MEMORY TO MONITOR A REFRIGERATOR/FREEZER

Following is a simple example of how to use the alarm and memory to monitor the temperature inside a refrigerator or freezer. This example is provided only as a helpful guide and is not intended to replace existing facility requirements or procedures.

In this example, the refrigerator temperature must be monitored and logged for each 24 hour period and certain actions must be taken if temperature falls below 0°C or rises above 5°C at any time during the 24 hour period.

### Unit Setup Example

1. Plug the probes into the unit.
2. Install the batteries.
3. Place the probe sensor inside the refrigerator.
4. Place the display outside the refrigerator.
5. Select the desired probe.  
(See the "Displaying Probe 1 or Probe 2" section.)

*At this point, if using a bottle probe, allow sufficient time for the bottle probe to reach equilibrium with the true current temperature inside the refrigerator.*

6. Set the probe temperature low alarm limit to 0°C. (See the "Setting The Temperature Alarm Limits" section.)
7. Set the probe temperature high alarm limit to 5°C. (See the "Setting The Temperature Alarm Limits" section.)
8. Enable the alarms. (See the "Enable/Disable Alarms" section.)
9. Clear the minimum and maximum memory. (See the "Clearing the Minimum/Maximum Memory" section.)
10. Slide the DISPLAY switch to the MIN MAX position. (See the "Viewing Min/Max Memory" section.)

The alarm limits have been set and the alarm has been enabled. The display has been set to show the current temperature inside the refrigerator along with the minimum and maximum temperature that has been achieved inside the refrigerator.

If the temperature inside the refrigerator goes outside the alarm limits (equal to or lower than the low alarm set point, or equal to or greater than the high alarm set point), the alarm will activate. The memory will provide a record of the single lowest and highest temperature achieved.

### Monitoring Procedure Example

Keep a notebook or spreadsheet as a manual log.

1. At the same time every day, record the following into the manual log:
  - Current Date and Time
  - Current Temperature Reading
  - Minimum Temperature Reading (MIN)
  - Maximum Temperature Reading (MAX)
2. Once the above items have been manually recorded, clear the temperature memory. (See the "Clearing the Minimum/Maximum Memory" section.)

By clearing the memory each day, the minimum and maximum temperature memory will provide a record of the minimum and maximum temperature that has been achieved inside the refrigerator over the past 24 hour monitoring period. In addition to the alarm, the memory will also allow the user to see if the temperature inside the refrigerator went outside of the acceptable range.

### ALL OPERATIONAL DIFFICULTIES

If this unit does not function properly for any reason, replace the batteries with new high-quality batteries (see the "Battery Replacement" section). Low battery power can occasionally cause any number of "apparent" operational difficulties. Replacing the batteries with new fresh batteries will solve most difficulties.

### BATTERY REPLACEMENT

Erratic readings, a faint display, no display, or a battery symbol appearing on the display are all indications that the batteries must be replaced. Remove the battery cover, located on the back of the unit, by sliding it down. Remove the exhausted batteries and replace them with two (2) new AAA alkaline batteries. Make certain to insert the new batteries with the proper polarity as indicated by the illustration in the battery compartment. Replace the battery cover.

Replacing the batteries will clear the minimum/maximum memories, the high/low alarm settings, and the time-of-day/date.

### WARRANTY, SERVICE, OR RECALIBRATION

For warranty, service, or recalibration, contact:

#### CONTROL COMPANY

4455 Rex Road  
Friendswood, Texas 77546 USA  
Ph. 281 482-1714 • Fax 281 482-9448  
E-mail sales@control3.com • www.control3.com

Control Company is ISO 9001 Quality-Certified by DNV and ISO 17025 accredited as a Calibration Laboratory by A2LA.

# TRACEABLE® HIGH ACCURACY REFRIGERATOR THERMOMETER INSTRUCTIONS